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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,542	04/02/2004	Jason A. Trachewsky	BP3185	2533
34399 7590 04/25/2007 GARLICK HARRISON & MARKISON P.O. BOX 160727 AUSTIN, TX 78716-0727			EXAMINER AHN, SAM K	
			ART UNIT 2611	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS			MAIL DATE 04/25/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/817,542

Applicant(s)

TRACHEWSKY ET AL.

Examiner

Sam K. Ahn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,9-11,19-29 is/are rejected.
- 7) ☒ Claim(s) 2-8 and 12-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Priority*

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 10/757,931, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. Application No. 10/757,931 discloses a configuration of a transmitter, while the instant application claims a configuration of a receiver. Application No. 10/757,931 fails to provide adequate support or enablement of the claimed configuration in a receiver.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 20-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claims 20-29 appears to be reciting an apparatus claim of a radio frequency integrated circuit, wherein the body of the claim further recites, which appears to be a process or a method steps. Therefore, it is unclear and indefinite as to whether the applicants are attempting to recite an apparatus claim or a method claim, thus fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maltsev et al. US 2005/0123060 A1 (Maltsev) in view of Vanderperren et al. US 2004/0076246 A1 (Vanderperren).

Regarding claim 10, Maltsev teaches a method for accurate signal detection in a wireless environment (see Figs.1 and 2), the method comprises: receiving a radio frequency (RF) signal (114 to 102 in Fig.1); converting the RF signal into a down converted baseband signal (102, wherein one skilled in the art would

recognize that the receiver such as 102 includes a downconverter to provide a down converted baseband signal, note US 2004/0190560 A1, and see 202 including 220 providing a down converted baseband signal output of 220); performing a pattern detection (106 in Fig.1 further shown in Fig.2) on the down converted baseband signal to produce a normalized detected signal (output of 202);

comparing the normalized detected signal with a set of thresholds (output of 202 is compared with thresholds 212);

and when the normalized detected signal compares favorably with the set of thresholds, indicating that the down converted baseband signal is valid (output 208, note paragraph 0022, indicating which subchannels in the baseband signal is valid or active).

And although the detection of the signal is of a pattern of a training sequence (note paragraph 0021), Maltsev does not explicitly teach wherein the training sequence is a periodic signal.

Vanderperren teaches a training sequence, wherein the training sequence is a periodic signal (note paragraph 0007). Hence, both Maltsev and Vanderperren teaches reception of a training sequence for further processing, wherein Vanderperren teaches that the training sequence is a periodic training sequence in order to be further used for coarse frequency estimation (note paragraph 0007). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the teaching of Vanderperren in the

system of Maltsev of having the training sequence as a periodic signal for the purpose of further implementing the training sequence for coarse frequency estimation (note paragraph 0007).

Regarding claim 20, the claim is rejected as applied to claim 10 with similar scope. The further limitation of a transmitter section operably coupled to convert outbound baseband data into outbound radio frequency signals, Maltsev teaches (note paragraph 0017) wherein element 100 in Fig.1 also performs transmitting RF communications, hence one skilled in the art would recognize that baseband signals from baseband data are upconverted into RF signals to be transmitted through antenna 114. Furthermore, another element such as 100 in Fig.1 intended to be receiving the transmitted RF signals would be receiving as explained in regards to claim 10.

5. Claims 1,9,11,19,21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maltsev et al. US 2005/0123060 A1 (Maltsev '060) in view of Vanderperren et al. US 2004/0076246 A1 (Vanderperren) and Maltsev et al. US 2004/0190560 A1 (Maltsev '560).

Regarding claim 11, Maltsev '060 in view of Vanderperren teaches all subject matter claimed, as applied to claim 10, however, does not further teach performing a normalized auto-correlation on the down converted baseband signal to produce a normalized auto-correlation signal; and when the normalized auto-

correlation value compares favorably with an auto-correlation threshold, indicating that the down converted baseband signal is valid.

Maltsev '560 teaches a short training symbol processing element (see Fig.3) performing a normalized auto-correlation on the down converted baseband signal to produce a normalized auto-correlation signal (output of 306 by auto correlation); and when the normalized auto-correlation value compares favorably with an auto-correlation threshold, indicating that the down converted baseband signal is valid (output of 306 is compared with a threshold to determine correlations above the predetermined threshold, note paragraph 0028, hence are valid signals when above the threshold). Both Maltsev '060 and Maltsev '560 teach training symbol processing circuitry for processing baseband signals wherein Maltsev '560 further teaches performing auto-correlation in order to detect OFDM packet (note paragraph 0028). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the teaching of auto correlation element 302 of Maltsev '560 in the short training symbol processing circuitry 106 in Fig.1 of Maltsev '060 for the purpose of performing auto-correlation in order to detect OFDM packet (note paragraph 0028).

Regarding claim 19, Maltsev '060 in view of Vanderperren teaches all subject matter claimed, as applied to claim 10 of performing periodic pattern detection on a short training sequence of the down converted baseband signal (as previously

explained), however, does not further teach performing an auto-correlation on a short training sequence of the down converted baseband signal.

Maltsev '560 teaches a short training symbol processing element (see Fig.3) performing a auto-correlation on the down converted baseband signal to produce a normalized auto-correlation signal (output of 306 by auto correlation); and when the normalized auto-correlation value compares favorably with an auto-correlation threshold, indicating that the down converted baseband signal is valid (output of 306 is compared with a threshold to determine correlations above the predetermined threshold, note paragraph 0028, hence are valid signals when above the threshold). Both Maltsev '060 and Maltsev '560 teach training symbol processing circuitry for processing baseband signals wherein Maltsev '560 further teaches performing auto-correlation in order to detect OFDM packet (note paragraph 0028). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the teaching of auto correlation element 302 of Maltsev '560 in the short training symbol processing circuitry 106 in Fig.1 of Maltsev '060 for the purpose of performing auto-correlation in order to detect OFDM packet (note paragraph 0028).

Regarding claim 1, the claim is rejected as applied to claim 11 with similar scope.

Regarding claim 9, the claim is rejected as applied to claim 19 with similar scope.



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Regarding claim 21, the claim is rejected as applied to claim 11 with similar scope.

Regarding claim 29, the claim is rejected as applied to claim 19 with similar scope.

***Allowable Subject Matter***

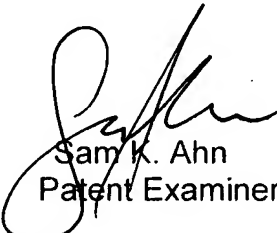
6. Claims 2-8 and 12-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Claims 22-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
8. The following is a statement of reasons for the indication of allowable subject matter: present application discloses a receiver of performing a periodic training sequence detection of comparing with thresholds to determine presence of a valid signal. Prior art teaches all the limitations claimed. However, prior art does not explicitly teach the combined limitations of match filtering the down converted baseband signal, convolving the matched filtered signal, convolving the down converted baseband signal and comparing the squared absolute value of the result of the two convolving steps to produce its output.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam K. Ahn  
Patent Examiner

4/19/07